

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP00/06600

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ C08L9/00, C08L91/00, C08K3/36, C08K3/34

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ C08L9/00, C08L91/00, C08K3/36, C08K3/34

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
Derwent WPIL "C08L9/06", "epoxy", "glycidyl", "silica" in abstract

C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category* | Citation of document, with indication, where appropriate, of the relevant passages | Relevant to claim No. |
|-----------|---|-----------------------|
| X | JP, 07-330959, A (Toyo Tire and Rubber Co., Ltd.), 19 December, 1995 (19.12.95), Claims; Par. No. 0016; example (Family: none) | 1-15 |
| A | JP, 10-292068, A (Toray Dow Corning Silicone Co., Ltd.), 04 November, 1998 (04.11.98), Claims (Family: none) | 1-15 |

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search
20 November, 2000 (20.11.00)Date of mailing of the international search report
28 November, 2000 (28.11.00)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

PCT

REQUEST

The undersigned requests that the present international application be processed according to the Patent Cooperation Treaty.

For receiving Office use only

International Application No. PCT

International Filing Date 26.09.2000

Received

Name of receiving Office and "PCT International Application"

Applicant's or agent's file reference
(if desired) (12 characters maximum) P-35836

Box No. I TITLE OF INVENTION
RUBBER COMPOSITION

Box No. II APPLICANT

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

ASAHI KASEI KABUSHIKI KAISHA

2-6, Dojimahama 1-chome, Kita-ku, Osaka-shi, OSAKA
530-8205 JAPAN

☐ This person is also inventor.

Telephone No.

Facsimile No.

Teleprinter No.

State (i.e. country) of nationality: JAPAN

State (i.e. country) of residence: JAPAN

This person is applicant for the purposes of: ☐ all designated States ☒ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box:

Box No. III FURTHER APPLICANT(S) AND/OR (FURTHER)INVENTOR(S)

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

SAITO Akira

10-35, Tsujidomotomachi 2-chome, Fujisawa-shi,
Kanagawa 251-0043 Japan

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only (if the check box is marked, do not fill below)

State (i.e. country) of nationality: JAPAN

State (i.e. country) of residence: JAPAN

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box:

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. IV AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCE

The person identified below is hereby/has been appointed to act on behalf of the applicant(s) before the competent International Authorities as:

☒ agent

☐ common representative

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

Patent Attorney (10564) OGURI Shohei
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Patent Attorney (10858) ICHIKAWA Toshimitsu
Patent Attorney (11510) TAKAMATSU Takeshi
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Telephone No.

03-5561-3990

Facsimile No.

03-5561-3995

Teleprinter No.

☐ Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.

Continuation of Box No. III FURTHER APPLICANTS AND/OR (FURTHER) INVENTORS

If none of the following sub-boxes is used, this sheet is not to be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

YAMADA Haruo

17-1-602, Kamariyahigashi 6-chome, Kanazawa-ku,
Yokohama-shi, Kanagawa 236-0042 Japan

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only (if the check-box is marked, do not fill below)

State (i.e. country) of nationality: JAPAN

State (i.e. country) of residence: JAPAN

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

KUBO Nobuaki

18-6-202, Shibokuhoncho 4-chome, Miyamae-ku,
Kawasaki-shi, Kanagawa 216-0031 Japan

This person is:

☐ applicant only

☒ applicant and inventor

☐ inventor only (if the check-box is marked, do not fill below)

State (i.e. country) of nationality: JAPAN

State (i.e. country) of residence: JAPAN

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

NAKAFUTAMI Yasunobu (deceased)

Heiress NAKAFUTAMI Hiromi

Heiress NAKAFUTAMI Sakiho

A person in parental authority NAKAFUTAMI Hiromi

Heir NAKAFUTAMI Takekazu

A person in parental authority NAKAFUTAMI Hiromi

This person is:

☐ applicant only

☐ applicant and inventor

☒ inventor only (if the check-box is marked, do not fill below)

State (i.e. country) of nationality:

State (i.e. country) of residence:

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☐ the United States of America only

☐ the States indicated in the Supplemental Box:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

NAKAFUTAMI Hiromi

(Heiress of NAKAFUTAMI Yasunobu (deceased))

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Kanagawa 214-0003 Japan

This person is:

☒ applicant only

☐ applicant and inventor

☐ inventor only (if the check-box is marked, do not fill below)

State (i.e. country) of nationality: JAPAN

State (i.e. country) of residence: JAPAN

This person is applicant for the purposes of:

☐ all designated States

☐ all designated States except the United States of America

☒ the United States of America only

☐ the States indicated in the Supplemental Box:

☒ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Continuation of Box No. III FURTHER APPLICANTS AND/OR (FURHTER)INVENTORS

If none of the following sub-boxes is used, this sheet is not to be included in the request.

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

NAKAFUTAMI Sakiho
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Kawasaki-shi, Kanagawa 214-0003 Japan

This person is:

- ☒ applicant only
☐ applicant and inventor
☐ inventor only (if the check-box is marked, do not fill below)

State (i.e. country) of nationality: JAPAN

State (i.e. country) of residence: JAPAN

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

NAKAFUTAMI Takekazu
(Heir of NAKAFUTAMI Yasunobu (deceased))

4-31, Sugeinadazutsumi 3-chome, Tama-ku,
Kawasaki-shi, Kanagawa 214-0003 Japan

This person is:

- ☒ applicant only
☐ applicant and inventor
☐ inventor only (if the check-box is marked, do not fill below)

State (i.e. country) of nationality: JAPAN

State (i.e. country) of residence: JAPAN

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☒ the United States of America only ☐ the States indicated in the Supplemental Box:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

This person is:

- ☐ applicant only
☐ applicant and inventor
☐ inventor only (if the check-box is marked, do not fill below)

State (i.e. country) of nationality:

State (i.e. country) of residence:

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box:

Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)

This person is:

- ☐ applicant only
☐ applicant and inventor
☐ inventor only (if the check-box is marked, do not fill below)

State (i.e. country) of nationality:

State (i.e. country) of residence:

This person is applicant for the purposes of: ☐ all designated States ☐ all designated States except the United States of America ☐ the United States of America only ☐ the States indicated in the Supplemental Box:

☐ Further applicants and/or (further) inventors are indicated on a continuation sheet.

Box No. V DESIGNATION OF STATES

The following designations are hereby made under Rule 4.9(a) (mark the applicable check-boxes; at least one must be marked):

Regional Patent

- ☐ **AP ARIPO Patent:** KE Kenya, LS Lesotho, MW Malawi, SD Sudan, SZ Swaziland, UG Uganda, and any other State which is a Contracting State of the Harare Protocol and of the PCT
- ☐ **EA Eurasian Patent:** AM Armenia, AZ Azerbaijan, BY Belarus, KG Kyrgyzstan, KZ Kazakstan, MD Republic of Moldova, RU Russian Federation, TJ Tajikistan, TM Turkmenistan, and any other State which is a Contracting State of the Eurasian Patent Convention and of the PCT
- ☒ **EP European Patent:** AT Austria, BE Belgium, CH and LI Switzerland and Liechtenstein, DE Germany, DK Denmark, ES Spain, FI Finland, FR France, GB United Kingdom, GR Greece, IE Ireland, IT Italy, LU Luxembourg, MC Monaco, NL Netherlands, PT Portugal, SE Sweden, and any other State which is a Contracting State of the European Patent Convention and of the PCT
- ☐ **OA OAPI Patent:** BF Burkina Faso, BJ Benin, CF Central African Republic, CG Congo, CI Cote d' Ivoire, CM Camaroon, GA Gabon, GN Guinea, ML Mali, MR Mauritania, NE Niger, SN Senegal, TD Chad, TG Togo, and any other State which is a member State of OAPI and a Contracting State of the PCT (if other kind of protection or treatment desired, specify on dotted line)

National Patent (if other kind of protection or treatment desired, specify on dotted line):

- | | |
|--|---|
| <input type="checkbox"/> AL Albania | <input type="checkbox"/> LV Latvia |
| <input type="checkbox"/> AM Armenia | <input type="checkbox"/> MD Republic of Moldova |
| <input type="checkbox"/> AT Austria | <input type="checkbox"/> MG Madagascar |
| <input type="checkbox"/> AU Australia | <input type="checkbox"/> MK The former Yugoslav Republic of Macedonia |
| <input type="checkbox"/> AZ Azerbaijan | <input type="checkbox"/> MN Mongolia |
| <input type="checkbox"/> BA Bosnia and Herzegovina | <input type="checkbox"/> MW Malawi |
| <input type="checkbox"/> BB Barbados | <input type="checkbox"/> MX Mexico |
| <input type="checkbox"/> BG Bulgaria | <input type="checkbox"/> NO Norway |
| <input type="checkbox"/> BR Brazil | <input type="checkbox"/> NZ New Zealand |
| <input type="checkbox"/> BY Belarus | <input type="checkbox"/> PL Poland |
| <input type="checkbox"/> CA Canada | <input type="checkbox"/> PT Portugal |
| <input type="checkbox"/> CH and LI Switzerland and Liechtenstein | <input type="checkbox"/> RO Romania |
| <input checked="" type="checkbox"/> CN China | <input type="checkbox"/> RU Russian Federation |
| <input type="checkbox"/> CU Cuba | <input type="checkbox"/> SD Sudan |
| <input type="checkbox"/> CZ Czech Republic | <input type="checkbox"/> SE Sweden |
| <input type="checkbox"/> DE Germany | <input type="checkbox"/> SG Singapore |
| <input type="checkbox"/> DK Denmark | <input type="checkbox"/> SI Slovenia |
| <input type="checkbox"/> EE Estonia | <input type="checkbox"/> SK Slovakia |
| <input type="checkbox"/> ES Spain | <input type="checkbox"/> TJ Tajikistan |
| <input type="checkbox"/> FI Finland | <input type="checkbox"/> TM Turkmenistan |
| <input type="checkbox"/> GB United Kingdom | <input type="checkbox"/> TR Turkey |
| <input type="checkbox"/> GE Georgia | <input type="checkbox"/> TT Trinidad and Tobago |
| <input type="checkbox"/> HU Hungary | <input type="checkbox"/> UA Ukraine |
| <input type="checkbox"/> IL Israel | <input type="checkbox"/> UG Uganda |
| <input checked="" type="checkbox"/> JP Japan | <input checked="" type="checkbox"/> US United States of America |
| <input type="checkbox"/> KE Kenya | <input type="checkbox"/> UZ Uzbekistan |
| <input type="checkbox"/> KG Kyrgyzstan | <input type="checkbox"/> VN Viet Nam |
| <input checked="" type="checkbox"/> KR Republic of Korea | <input type="checkbox"/> YU Yugoslavia |
| <input type="checkbox"/> KZ Kazakstan | <input type="checkbox"/> ZW Zimbabwe |
| <input type="checkbox"/> LC Saint Lucia | |
| <input type="checkbox"/> LK Sri Lanka | |
| <input type="checkbox"/> LR Liberia | |
| <input type="checkbox"/> LS Lesotho | |
| <input type="checkbox"/> LT Lithuania | |
| <input type="checkbox"/> LU Luxembourg | |

Check-boxes reserved for designating States (for the purposes of a national patent) which have become party to the PCT after issuance of this sheet:

In addition to the designations made above, the applicant also makes under Rule 4.9(b) all designations which would be permitted under the PCT except the designation(s) of _____

The applicant declares that those additional designations are subject to confirmation and that any designation which is not confirmed before the expiration of 15 months from the priority date is to be regarded as withdrawn by the applicant at the expiration of that time limit. (Confirmation of a designation consists of the filing of a notice specifying that designation and the payment of the designation and confirmation fees. Confirmation must reach the receiving Office within the 15-month time limit.)

| Box No. VI PRIORITY CLAIM | | | <input type="checkbox"/> Further priority claims are indicated in the Supplemental Box. | | |
|--|----------------------------------|---|---|--|--|
| Filing date of earlier application (day/month/year) | Number of earlier application | Where earlier application is: | | | |
| | | national application: country | regional application:* regional Office | international application: receiving Office | |
| item (1) 27.09.99 | Pat. Hei. 11-272070 | Japan | | | |
| item (2) 27.09.99 | Pat. Hei. 11-272090 | Japan | | | |
| item (3) | | | | | |
| <input type="checkbox"/> The receiving Office is requested to prepare and transmit to the International Bureau a certified copy of the earlier application(s) (only if the earlier application was filed with the Office which for the purposes of the present international application is the receiving Office) identified above as item(s): | | | | | |
| <small>* Where the earlier application is an ARIPO application, it is mandatory to indicate in the Supplemental Box at least one country party to the Paris Convention for the Protection of Industrial Property for which that earlier application was filed (Rule 4.10(b)(ii)). See Supplemental Box.</small> | | | | | |
| Box No. VII INTERNATIONAL SEARCHING AUTHORITY | | | | | |
| Choice of International Searching Authority (ISA) <small>(if two or more International Searching Authorities are competent to carry out the international search, indicate the Authority chosen; the two-letter code may be used):</small> | | Request to use results of earlier search; reference to that search (if an earlier search has been carried out by or requested from the International Searching Authority): | | | |
| ISA / JP | | Date (day/month/year) | Number | Country (or regional Office) | |
| Box No. VIII CHECK LIST; LANGUAGE OF FILING | | | | | |
| This international application contains the following number of sheets: request : 6 description (excluding sequence listing part) : 52 claims : 4 abstract : 1 drawings : 0 sequence listing part of description : Total number of sheets : 63 | | This international application is accompanied by the item(s) marked below: 1. <input checked="" type="checkbox"/> fee calculation sheet, patent revenue stamps, certificate of payment of fees 2. <input type="checkbox"/> separate signed power of attorney 3. <input type="checkbox"/> copy of general power of attorney; reference number, if any: 4. <input type="checkbox"/> statement explaining lack of signature 5. <input type="checkbox"/> priority document(s) identified in Box No. VI as item(s): 6. <input type="checkbox"/> translation of international application into (language): 7. <input type="checkbox"/> separate indications concerning deposited microorganism or other biological material 8. <input type="checkbox"/> nucleotide and/or amino acid sequence listing in computer readable form 9. <input type="checkbox"/> other (specify): | | | |
| Figure of the drawings which should accompany the abstract: | | Language of filing of the international application: Japanese | | | |
| Box No. IX SIGNATURE OF APPLICANT OR AGENT | | | | | |
| <small>Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the request).</small> | | | | | |
| OGURI Shohei ICHIKAWA Toshimitsu HONDA Hironori TAKAMATSU Takeshi KURIU Yuriko | | | | | |

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| | |
|---|--|
| 1. Date of actual receipt of the purported international application: | 2. Drawings: <input type="checkbox"/> received: <input type="checkbox"/> not received: |
| 3. Corrected date of actual receipt due to later but timely received papers or drawings completing the purported international application: | |
| 4. Date of timely receipt of the required corrections under PCT Article 11(2): | |
| 5. International Searching Authority (if two or more are competent): ISA / JP | |
| 6. <input type="checkbox"/> Transmittal of search copy delayed until search fee is paid. | |

For International Bureau use only

 Date of receipt of the record copy
by the International Bureau:

国際調査報告

(法8条、法施行規則第40、41条)
〔PCT18条、PCT規則43、44〕

| | | |
|---------------------------|---|-------------------------|
| 出願人又は代理人 の書類記号 P-35826 | 今後の手続きについては、国際調査報告の送付通知様式(PCT/ISA/220)及び下記5を参照すること。 | |
| 国際出願番号 PCT/JP00/06600 | 国際出願日 (日.月.年) 26.09.00 | 優先日 (日.月.年) 27.09.99 |
| 出願人(氏名又は名称) 旭化成工業株式会社 | | |

国際調査機関が作成したこの国際調査報告を法施行規則第41条(PCT18条)の規定に従い出願人に送付する。
この写しは国際事務局にも送付される。

この国際調査報告は、全部で 2 ページである。

☐ この調査報告に引用された先行技術文献の写しも添付されている。

1. 国際調査報告の基礎

a. 言語は、下記に示す場合を除くほか、この国際出願がされたものに基づき国際調査を行った。

☐ この国際調査機関に提出された国際出願の翻訳文に基づき国際調査を行った。

b. この国際出願は、ヌクレオチド又はアミノ酸配列を含んでおり、次の配列表に基づき国際調査を行った。

☐ この国際出願に含まれる書面による配列表

☐ この国際出願と共に提出されたフレキシブルディスクによる配列表

☐ 出願後に、この国際調査機関に提出された書面による配列表

☐ 出願後に、この国際調査機関に提出されたフレキシブルディスクによる配列表

☐ 出願後に提出した書面による配列表が出願時における国際出願の開示の範囲を超える事項を含まない旨の陳述書の提出があった。

☐ 書面による配列表に記載した配列とフレキシブルディスクによる配列表に記録した配列が同一である旨の陳述書の提出があった。

2. ☐ 請求の範囲の一部の調査ができない(第I欄参照)。

3. ☐ 発明の単一性が欠如している(第II欄参照)。

4. 発明の名称は ☒ 出願人が提出したものを承認する。

☐ 次に示すように国際調査機関が作成した。

5. 要約は ☒ 出願人が提出したものを承認する。

☐ 第III欄に示されているように、法施行規則第47条(PCT規則38.2(b))の規定により国際調査機関が作成した。出願人は、この国際調査報告の発送の日から1カ月以内にこの国際調査機関に意見を提出することができる。

6. 要約書とともに公表される図は、

第 _____ 図とする。 ☐ 出願人が示したとおりである。

☒ なし

☐ 出願人は図を示さなかった。

☐ 本図は発明の特徴を一層よく表している。

A. 発明の属する分野の分類 (国際特許分類 (IPC))

Int. Cl⁷ C08L9/00, C08L91/00, C08K3/36, C08K3/34

B. 調査を行った分野

調査を行った最小限資料 (国際特許分類 (IPC))

Int. Cl⁷ C08L9/00, C08L91/00, C08K3/36, C08K3/34

最小限資料以外の資料で調査を行った分野に含まれるもの

国際調査で使用した電子データベース (データベースの名称、調査に使用した用語)

Derwent WPIL アブストラクト中の "C08L9/06", "epoxy", "glycidyl", "silica"

C. 関連すると認められる文献

| 引用文献の カテゴリー* | 引用文献名 及び一部の箇所が関連するときは、その関連する箇所の表示 | 関連する 請求の範囲の番号 |
|-----------------|--|------------------|
| X | JP, 07-330959, A (東洋ゴム工業株式会社) 19. 12月. 1995 (19. 12. 95) 特許請求の範囲、段落0016、実施例 & ファミリーなし | 1-15 |
| A | JP, 10-292068, A (東レ・ダウコーニング・シリコーン株式会社) 4. 11月. 1998 (04. 11. 98) 特許請求の範囲 & ファミリーなし | 1-15 |

☐ C欄の続きにも文献が列挙されている。☐ パテントファミリーに関する別紙を参照。

* 引用文献のカテゴリー

「A」特に関連のある文献ではなく、一般的技術水準を示すもの

「E」国際出願日前の出願または特許であるが、国際出願日以後に公表されたもの

「L」優先権主張に疑義を提起する文献又は他の文献の発行日若しくは他の特別な理由を確立するために引用する文献 (理由を付す)

「O」口頭による開示、使用、展示等に言及する文献

「P」国際出願日前で、かつ優先権の主張の基礎となる出願

の日の後に公表された文献

「T」国際出願日又は優先日後に公表された文献であって出願と矛盾するものではなく、発明の原理又は理論の理解のために引用するもの

「X」特に関連のある文献であって、当該文献のみで発明の新規性又は進歩性がないと考えられるもの

「Y」特に関連のある文献であって、当該文献と他の1以上の文献との、当業者にとって自明である組合せによって進歩性がないと考えられるもの

「&」同一パテントファミリー文献

国際調査を完了した日

20. 11. 00

国際調査報告の発送日

28.11.00

国際調査機関の名称及びあて先

日本国特許庁 (ISA/J P)

郵便番号100-8915

東京都千代田区霞が関三丁目4番3号

特許庁審査官 (権限のある職員)

原田 隆興



4 J

9167

電話番号 03-3581-1101 内線 3495